

In connection with the objection to the specification, PTO rules do not require the use of subject headings.

Claims 5 and 6 stand rejected under 35 USC 103(a) based on the combined teachings of Kratel and Takahashi. Claims 7, 8, and 9 stand rejected under 35 USC 103(a) based on the combined teachings of Kratel, Takahashi, and Sklarski. Reconsideration is requested with respect to the foregoing rejections under §103(a).

By way of review, the presently claimed invention provides a microporous heat insulation body of heat insulation materials "manufactured by dry compressing." To be "manufactured by dry compressing," the (dry) ingredients are mixed and compressed. Under these conditions materials typically exhibit high resilience, referred to as "spring back." Surprisingly, adding xonotlite to the ingredients prevents "spring back" and improves stability of the resulting microporous "body."

The inhibiting effect on spring back is illustrated by Examples 1 and 2 of the instant specification. The data obtained, as recorded in the tables in Example 2, show that addition of xonotlite both reduces "spring back" and increases the stability, i.e., as a function bending strength, of the microporous heat insulation body, in accordance with the of the presently claimed invention.

According to the statement of rejection, claims 5 and 6 are unpatentable over Kratel in view Takashi because:

Kratel et al discloses a microporous heat insulating board that contains 30 to 100% by weight of finely divided metal oxide, 0 to 50% by weight of an opacifier, 0 to 15% of an organic binder and 0 to 50% by weight of a fibrous material (Column 4, claim 1). However, Kratel et al fails to disclose 2 to 45% or 5 to 15% of xonotlite present in the heat insulating board.

Takahashi et al teaches 2 to 60% (column 7, lines 30-34) of xonotlite (column 21, lines 59-61), 21 to 70% of an inactive substance (column 5, lines 53-55) which includes metal oxides (column 5, lines 31-40) and other additives such as fibers and binders (column 7, lines 51-53) in an insulation board for the purpose of forming a board that is light weight, has excellent insulating properties over a wide range of temperatures and has high fire resistance.

It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided the xonotlite as a component in Kratel et al in order to form a board that is light weight, has excellent insulating properties over a wide range of temperatures and has high fire resistance as taught by Takahashi et al.

Regarding the heat insulating bodies being manufactured by dry compressing in claim 1, the determination of patentability for a product-by-process claim is based on the product itself and not on the method of production. If the product in the product-by-process claim is the same or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 946, 966 (Fed. Cir. 1985) and MPEP §2113. In this case, the limitation of dry compressing is a method of production and therefore does not determine the patentability of the product itself. Process limitations are given little or no patentable weight. The method of forming the product is not germane to the issue of patentability of the product itself. Further, when the prior art discloses a product which reasonably appears to be either identical with or only slightly different than a product claim in a product-by-process claim, the burden is on the Applicant to present evidence from which the Examiner could reasonably conclude that the claimed product differs in kind from those of the prior art. *In re Brown*, 459 F.2d 531, 173 USPQ 685 (CCPA 1972); *In re Fessman*, 489 F.2d 742, 180 USPQ 324 (CCPA 1974).

To establish *prima facie* obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970). When conducting an obviousness analysis, "all limitations of a claim must be considered in determining the claimed subject matter as is referred to in 35 U.S.C. 103 and it is error to ignore specific limitations

distinguishing over the [prior art] reference." *Ex parte Murphy*, 217 USPQ 479, 481 (PO Bd. App. 1982). When the claimed invention requires modification of the prior art, there is no obviousness under §103 when "[t]he prior art does not suggest . . . modification of the . . . [prior art], or provide any reason or motivation to make the modification." *In re Laskowski*, 10 USPQ2d 1397, 1398 (Fed. Cir. 1989). The totality of each reference's teachings must be considered when combining those teachings with the rest of the prior art. *W. L. Gore & Assoc., Inc. v. Garlock, Inc.*, 220 USPQ 303, 311 (Fed. Cir. 1983), *cert. denied*, 469 U.S. 851 (1984).

It is impermissible within the framework of §103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciate of what such reference fairly suggests to one of ordinary skill in the art.

*In re Hedges*, 228 USPQ 685, 687 (Fed. Cir. 1986).

Kratel teaches a microporous thermal insulation molding. According to Kratel (column 3, lines 20 to 31) the product of Kratel comprises channel pores prepared by drills, punches, milling cutters, or embossing stamps. As acknowledged in the statement of rejection, Kratel does not teach including xonotlite in the described product.

Takashi (U.S. Patent No. 4,647,499) teaches a shaped body of calcium silicate and a process for producing same. In detail it discloses a calcium silicate shaped body comprising a mixture of calcium silicate crystals and an inorganic inactive substance.

One possible embodiment of calcium silicate crystal are xonotlite crystals. According to Takahashi the end mixture is pressed for de-watering and shaping and then dried at 100 ° C

(Takahashi column 12, lines 6-10). Therefore, Takahashi teaches the use of water in the method of preparation, whereas the presently claimed invention uses a manufacturing by dry-compressing.

The product of the presently claimed invention cannot be obtained by combining Kratel et al and Takahashi et al. In combining separate teachings in the prior art in a §103(a) analysis, it must be remembered that: "One cannot use hindsight reconstruction to pick and choose among isolated disclosures in the prior art to deprecate the claimed invention." *In re Fine*, 5 USPQ2d 1596, 1600 (Fed. Cir. 1988).

It is impermissible within the framework of §103 to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art.

*In re Hedges*, 228 USPQ 685, 687 (Fed. Cir. 1986).

As such, combining the cited references would result in mixing a wet xonotlite slurry, as taught by Takahashi, with a dry mix of finely divided metal oxide (for example, pyrogenic silica), as taught by Kratel (Kratel claim 1 and claim 4). Materials such as pyrogenic silica are not compatible with water, because a destruction of the structure occurs. Due to high capillary forces, products containing pyrogenic silica crack upon drying when a wet formation process is applied. This is demonstrated in the attached "Experimental report."

The Experimental report illustrates the importance of the "dry compression" feature of the presently claimed invention. The matrix obtained by dry compressing is totally different from the matrix obtained from a wet process. This Experimental report compares the  $\lambda$ -values corresponding

to the heat insulation properties of products obtained by wet and dry processes. A low  $\lambda$ -value corresponds to good heat insulation properties. The difference between dry and wet methods of preparation are therefore clearly demonstrated in the Experimental report, as requested by the Examiner in the Office Action.

According to the statement of rejection, claims 7-9 are unpatentable over Kratel in view Takashi and Sklarski because:

Kratel et al as modified with Takahashi et al., discloses the claimed invention above except for at least one or both sides of the core having a cover of a heat-resistant material, characterized in that the cover are the same or different and at least one side consists of pre-compressed xonotlite, mica or graphite, the cover consists of a prefabricated mica sheet on both surfaces.

Sklarski et al teaches binder being impregnated in a mica paper or papers (column 1, lines 47-52) before placed under heat and pressure (column 6, lines 33-35) in a laminate for the purpose of forming a insulating structure with excellent flexibility, higher moisture resistance and more strength that can be used as supporting insulating for high temperature thermostats, control devices, strip heaters and baseboard heaters.

It would have been obvious to one of ordinary skill in the art at the time the Applicant's invention was made to have provided a layer of mica sheets as cover sheets in the modified Kratel et al in order to forming a insulating structure with excellent flexibility, higher moisture resistance and more strength that can be used as supporting insulation for high temperature thermostats, control devices, strip heaters and baseboard heaters as taught by Sklarski.

Sklarski discloses a flexible mica insulating structure.

The material disclosed by Sklarski discloses up to 25% by weight of an organic compound (Sklarski column 1, lines 47-55). According to Sklarski (column 2, lines 24-28), these binders are preferably stable up to 180° C. This is totally insufficient for a heat insulation body, which must be heat stable up to 1000° C. The mica product of Sklarski is useful for electrical insulation and is

temperature resistant in electrical articles. It is not useful for heat insulation bodies. Therefore, even by combining Kratel with Takahashi and Sklarski, one skilled in the art would not have obtained the product as defined in present claims 7 to 9. A person skilled in the art would not have even considered using the material of Sklarski for heat insulation bodies, which require stability up to 1000° C.

Claims were provisionally rejected for alleged obviousness type double patenting over a copending application. Unless and until such time as there are patented claims, on the one hand, and allowable claims, on the other, there is no way to determine whether obviousness type double patenting, in fact, exists. Absent a finding of obviousness type double patenting, in fact, it would be premature for Applicant to address such a rejection, including by filing a terminal disclaimer. In the event such finding is made, i.e., the rejection is no longer provisional, Applicant will address the rejection.

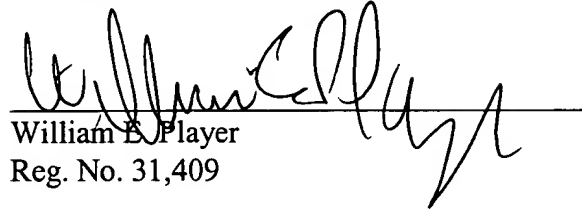
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Favorable action is requested.

Respectfully submitted,

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